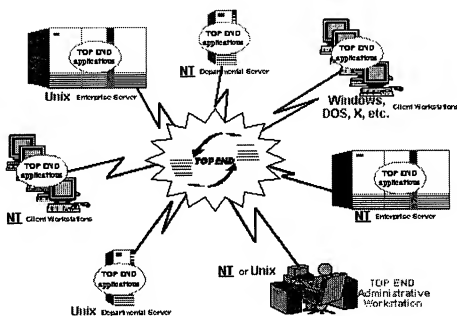enterprise servers. The following figure illustrates the potential use of NT for mixed computing environments.

Potential Use o_NT_ for Mixed Computing Environments

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The Industry On TOP END

2/4/96

Enterprise computing has experienced an enormous amount of change in the last ten years. Perhaps most impressive is the surge toward open systems environments. Many enterprises have already made the move to open systems and are enjoying its new-found flexibility and price/performance benefits. Others realize that moving to open systems is inevitable if they are to remain competitive in their marketplace.
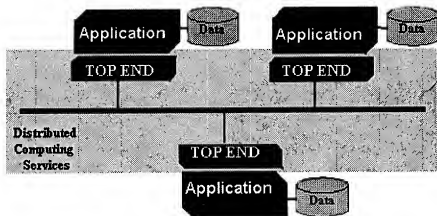
Unfortunately, the transition to open systems is overwhelming to most people. Information Systems (IS) managers are concerned with protecting their technology investment, and they're not sure how to make all of their current computing components work together, let alone with new third-party platforms and applications. To help IS managers make the transition, NCR has designed a product that orchestrates their move to open systems and manages their resources in the new environment, all while protecting their investment in technology. This product is called TOP END.

NCR TOP END is robust, client/server *middleware* that brings together all of the disparate computing components of your enterprise and manages them in an open, distributed environment. It is the foundation for development and deployment of business-critical applications in enterprise-wide computing systems. TOP END runs on platforms from a variety of vendors and lets you choose which relational database, graphical user interface, and networking protocol to use. TOP END provides:

* Scaleability from desktop to massively parallel processing systems
* 24x7x52 high availability
* Comprehensive security
* Robust administrative facilities
* Legacy mainframe co-existence
* Open systems compliance
* Extensive range of application, tool, DBMS, and connectivity options

- **Comprehensive client/workstation support**
- **Heterogeneous platform support**

As shown in the figure below, middleware is software layered between your business application logic and the underlying networking, security, and distributed computing technology. It provides all of the critical services needed to manage the execution of applications in a distributed client/server environment. Middleware shields your applications from much of the complexity of distributed computing and can reduce the cost of moving from the closed, glass-house computing of the past to today's more common distributed, open computing environment.

Middleware: the Foundation Layer for Enterprise Components

As with most technologies, the services that middleware performs are largely vendor specific. Where some middleware products focus primarily on transaction monitoring, NCR TOP END performs a rich set of middleware services like dynamic load balancing, legacy system access, enterprise-wide administration, and end-to-end security. Of course, TOP END is an excellent online transaction monitor as well. Because TOP END is so comprehensive, it is classified by industry analysts as "robust" middleware.

Middleware products also differ in the way they perform their services. Many middleware products use remote procedure calls or act as database gateways or object request brokers. TOP END is a message passing system that enables distributed applications to talk to each other. Application messages contain requests to perform a service on to provide information needed by an application and ultimately by a user.

Through its robust transaction services and unique message passing system, TOP END sets itself apart from other middleware products.

The Industry On NT

With hundreds of thousands of licenses to date it is clear that Microsoft Windows NT is making a big impact on the Information Technology (IT) industry. Microsoft has clearly established NT as a successful and widely supported operating system. But just how is NT being used in distributed computing environments? The answer-from users,